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LEAVING HOME:

**MODELING THE EFFECT OF CIVIC AND ECONOMIC STRUCTURE ON
INDIVIDUAL MIGRATION PATTERNS***

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Abstract

This research analyzes the effect of community structure upon individuals' probabilities of moving between 1985 and 1990. Using the full Census sample long form microdata for 1990, we re-allocate adult persons in 1990 to their 1985 county of residence. Then, using origin county macro-structural variables (derived from the Economic Census microdata) and individual characteristics (from Decennial Census microdata), we develop a two level hierarchical linear model. In level 1, we construct a logistic equation modeling individual probabilities of moving. In level 2, we model the contextual effects of origin community structure on these models. These contextual effects fall into two categories: 1) economic conditions that comprise the usual aggregate 'push' factors and 2) civic community factors that act to retain people in their community. Results specify the relationship between community context and individual migration patterns, and demonstrate effects of local economic structure and local civic structure on these individual probabilities. Most notably, we find that civic attributes of communities are associated with a propensity to stay in place, net of community economic factors and individual characteristics.

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Introduction:

Why are individuals more prone to leave some communities than others? Migration studies well document that out-migration behavior is predicated both upon individual characteristics and events impacting those individuals. For instance people in their 20s are more likely to leave an area in any given period. Likewise adults with school aged children often consider moving to school districts that are perceived to be better. Clearly the decision to migrate is influenced by individual characteristics, but is this all that determines migration?

Aggregate analyses have shown that in some areas vibrant social and economic conditions are stemming the rates of out-migration. Our previous work has shown that communities with a civically engaged citizenry and an economy with locally oriented businesses also have higher proportions of nonmigrants (Irwin, Tolbert and Lyons 1997; Tolbert, Irwin and Lyson, 1998; Irwin, Tolbert and Lyson, 1999; Tolbert, Irwin, Lyson and Nucci, 2002). These communities may well provide social conditions that moderate the probabilities of migration associated with individual characteristics like age and presence of children. But, this macro-community outcome is not necessarily evident in individual migration behaviors. More generally, there has been an absence of research that links individual-level behavior to community civic structure.

In our current study we address this point directly. We identify and evaluate the local macro level conditions that lead individuals to stay rather than leave their communities. Our research objectives are to specify the relationship between community context and individual migration behavior. These macro-level factors are largely overlooked as important policy foci. As Theodori recently noted “Little justification has been found for programs directed at strengthening community satisfaction and/or attachment; a possible reason is that little is known about their potential effects on the individual - and community-level issues” (Theodori 2001). Our research provides such information. By quantifying the social and cultural factors anchoring citizens to their communities, this study provides critical information about factors influencing migration decisions at the micro level, thus providing demographic stability in communities.

Although there have been attempts to explore these issues using state level data (Gurak and Kritz 2000), these relationships cannot be assessed comprehensively for communities using publicly available data. In this research, we use multilevel modeling of migration that relies on confidential internal microdata at the Census Bureau. With over 40 million long form records, these data permit us to combine individual models with local community characteristics in a truly comprehensive manner. Using HLM we run individual micro-level models for all counties in the contiguous US, then examine the contextual effects of community structure upon these individual outcomes. The detailed coverage for local geographic areas permit us to model individual migration outcomes in the context of America’s communities.

Specifically we argue that small firms with local ownership, regional trade associations, and local entrepreneurs are firmly integrated with local government, local churches and social associations as potentially important, though often neglected, structures for community development. In these communities, social and cultural contexts strengthen notions of community embeddedness and decouple individual migration behavior from purely economic

calculation. And when people stay, communities continue. Importantly these civic factors extend demographic theory beyond the somewhat narrow set of economic variables currently highlighted in the migration literature.

Community Social Context and Migration

Explanations of migration typically focus on factors that determine in and out-migration streams across localities, and the characteristics of individuals' that influence preferences among all possible destinations. These explanations of migration tend to be grounded in neoclassical economic theory— the rational calculation of the costs and benefits in choosing one destination over another. In these neoclassical models the decision to stay in one's community is under constant evaluation relative to the economic cost of moving and benefits that could accrue with a move. In this approach migrating or not migrating are simply flip sides of the same phenomenon, and the factors that explain migration and nonmigration are the same (Da Vanzo 1978; Greenwood 1985).

An alternative approach stresses that factors anchoring people to places are a distinctly different set of factors from pre-eminent determinants of migration (Morrison 1972; Petersen 1958; Speare 1974; Uhlenberg 1973). These nonmigration factors are found in the social and cultural milieu of community (Tolbert et al. 2002; Irwin, et al 1999; Kasarda and Janowitz, 1974; Uhlenberg 1973). This line of research argues that, on an aggregate level, migrants and nonmigrants constitute somewhat separate subpopulations, one constituting the stable core of a community's population, the other comprising the flow of labor and human capital across communities. In terms of individual migration decisions, person residing in tightly integrated communities with dense local social networks and effective civic institutions may not engage in the economic calculus of migration, even when a purely economic rationality would warrant.

For those people residing in less civically cohesive communities, this community context would make little difference. For these residents the likelihood of migration is more determined by possible gains accrued with a move. In this, the differences between nonmigrants and migrants lie in their relationship to their community. While this commitment to community is influenced by individual characteristics (one's age, one's family situation etc), we argue that the effect of these individual factors on the likelihood of migration are themselves contingent upon the nature of the community one is in. Communities with more socially integrating institutions are more likely to keep an individual from engaging in the calculus of migration, regardless of individual characteristics, than a community with a dearth of these institutions.

Several lines of related research provide analytic support for this social structural view. Uhlenberg (1973) and Speare, Kabin, and Kingkade (1982) show that noneconomic factors are important in constraining migration decisions and tend to anchor populations in localities while economic push-pull explanations operate primarily once the decision to migrate has been made. Similarly, researchers using residential satisfaction models (Speare, 1974; Speare, Goldstein and Frey, 1975; Deane, 1990) and residential stress models (Wolpert 1965; Brown and Moore 1970) argue that economic cost-benefit models fare poorly in explaining the decision to migrate and must be supplemented with noneconomic factors.

Both lines of research argue that local contextual factors are important noneconomic determinants of individual intentions to remain in an area. Stress-threshold models argue that shifts in the balance between household needs (often life course changes) and local conditions (particularly neighborhood environments) create stressors that motivate people to consider moving. Only when activated by residential stress do individuals calculate migration destinations along cost benefit lines. Residential satisfaction (Fuguitt and Zuiches 1975) explanations hold that such stresses are necessary but not sufficient conditions to explain the shift from stability to mobility. Social context acts to suppress migration consideration, thus precluding many individuals in such areas from even engaging in relative comparisons among other residential areas.

The importance of these macro-level community contexts are exemplified in research on size of place preferences (Fuguitt and Brown 1990; Heaton et al 1979; Zuiches 1981). This research indicates that satisfaction with current community context is a major determinant of the decision to migrate. Primary determinants of satisfaction include what may be construed as perceived civic embeddedness: recreation or cultural access, being near friends and family, contacts with a variety of people (Fuguitt and Zuiches 1975). However, these satisfaction rates vary by type of community.

While community and neighborhood satisfaction is clearly related to social embeddedness, the specific institutional factors that anchor people to places have not been widely modeled (Kulkarni and Pol 1994). Conversely, in sociology and political science there is a rich theoretical tradition that highlights the role that institutions play in creating civic engagement and community attachment. However, these factors are usually linked only tangentially to demographic stability in local areas. We link these two traditions to specify the institutional mechanisms influencing individual nonmigration/migration behavior. Specifically we argue that institutions which create civic engagement and link individuals into a larger community are central in altering individual migration behavior. Simply, in communities where these civic factors are strong, fewer people consider moving away, and the community establishes a strong core of long-term citizens.

Research Design:

We use hierarchical linear modeling techniques to analyze confidential individual-level migration data from the 1990 decennial censuses. Use of confidential US Census data resources (at the Carnegie Mellon University Research Data Center) allows us to link individual migration behaviors and (county-level) community characteristics. The use of these data have a number of advantages over public data sources. To prevent persons or establishments from being identified, public-use data sources lack sufficient detail to identify individuals or businesses in specific smaller communities. The severely limited geography available on public files is especially problematic for the study of small areas. It is not possible to conduct a spatially comprehensive migration analysis that links micro-level migration behavior to characteristics of communities with public data. Sufficiently large samples of individuals within communities across the U.S. do not exist in the public domain. As we will discuss below, very large samples are necessary for a

comprehensive analysis of individual nonmigration/migration behavior and local community context.

To measure community context, we use microdata from the Economic Census to construct aspects of community economic and social structure. Unlike household censuses, there are no microdata on business establishments made public from economic censuses. Most social scientists rely on data files such as County Business Patterns which summarize administrative data (tax returns) at the county level. The Census Bureau maintains a national business register (the Standard Statistical Establishment List or SSEL) which contains this same tax data, and is also updated annually. After each economic census, internal microdata files are generated as well. These establishment microdata files are available to researchers who agree to follow Census Bureau disclosure procedures and are approved for access. Information includes size, payroll, sales, age or longevity, single- vs. multi-unit status, legal form of organization (partnership, proprietorship, corporation), and detailed geography (state, county, place, zip code). From these data we construct our measures of community context for counties in the continental US.

Our individual analysis includes approximately 20 million individual long form records for more than 3000 counties. Migration horizons are from 1985 to 1990. Population examined includes all individuals 20 years and older residing within the continental United States in both 1985 and 1990. From the microdata we have recreated the populations of these counties in 1985 by putting people back in their county of origin. Thus, this research reconstructs the population of the America for these years (minus mortality and emigration) and then examines the probability that people would stay or leave during these time periods. The flexibility inherent in the internal Census long-form data permits us to assemble data tantamount to a 1985 Census. Evaluating the effects of community structure in these counties of origin on the individual probabilities of not migrating, for these 20 million individuals is the main research goal this research.

Specific factors for both individual and community context are discussed below. Table 1 provides means and standard deviations for variable used in this analysis.

Individual Migration Factors

Our dependent variable is measured as a contrast between migrants and nonmigrants. Since our interest is in factors embedding people in places we categorize nonmigrants as one and migrants as zero. Thus associated probabilities and odds in the HLM model are interpreted as the *likelihood of nonmigration*. In our sample, about 81% of the individuals stayed in their county of origin during the 1985 to 1990 period. This corresponds to an 81% probability of staying in one's county for five years. However, our analysis shows that there is considerable variation in this likelihood of nonmigration. What accounts for this variation?

Certainly individual factors affect the probability of migrating or staying. These are well established in the demographic literature and fall into two general types of variables, those that are characteristics of each person and those that are characteristics of each person's family or household. Below we outline specific operationalization of these characteristics. To facilitate interpretation of the dependent variable (log odds of nonmigration), we categorize these individual characteristics in a series of dummy variables.

Person Characteristics. **Age** is a predominant predictor of nonmigration/migration. There is generally an inverse pattern between age and migration, with the highest probabilities of migration found among young adults and adults in the retirement ages of 65 to 75 (Jamieson 2000; Long 1972). In our study we exclude those at the oldest (post 65) ages, and need not concern ourselves with this age group. We categorize age groups by those in the hypermobile age group 20-29 (in 1985) vs all others. **Education** also is a reliable predictor of migration, with the probability of migrating increasing with years of education beyond high school (Long 1973, Long 1992). We contrast persons with at least a college degree with all others. Both **gender** and **race/ethnicity** exhibit small but important influences in determining nonmigration. Work by South, Deane, Crowder and others indicates that race patterns of mobility differ (South 1998; South and Crowder 1997a; South and Crowder 1997b; South and Deane 1993). Race and ethnicity in particular has been shown by various authors (Breton 1970; Clark 1992; Kobrin and Speare) to increase nonmigration, particularly when the sending area has a distinct minority or ethnic community identity. In our individual models we contrast blacks with all other races, and hispanics with nonhispanic ethnicity. White and Mueser (1988) show **living outside of state of birth** to be clearly related to migration, hypothesizing that this indicates a footloose mover with weak ties to place.

Household Characteristics. Of equal importance with these person-specific characteristics are aspects of household and family structure (Sandefur and Scott 1981). Foremost of these are the **presence of children in 1990**. Overall the presence of children has been shown to reduce migration. However children may increase mobility due to life course decisions, such as housing changes and school district changes. We contrast individuals living with children during the migration period to all others.¹ **Marital status** is most important in differentiating single adult

¹One notable caveat here, however, is that our data do not provide complete coverage of the presence of children through the 1985 to 1990 period. Those families whose last child left the household by 1990 are categorized with those who did not have children through the migration

households from others. Simply this indicates that migration decisions are exclusively the purview of one adult vs a negotiated decision (children's wishes aside). This variable is coded one if the person reported being married with a spouse present in 1990. Thus the reference group to which we compare these individuals are white nonhispanic males, over the age of 30 in 1985, who are not married or without a spouse present, don't have children present in 1990, do not have a college degree, and are not living in their state of birth.

Community Structure

We conceptualize the properties of community economic structure as comprised of labor force and business establishment characteristics. To measure labor force dynamics, we include percent growth in the labor force and the average unemployment rate during the 1980-1989 from the Regional Economic Information System (BEA 2001). We also include a measure of the percentage employed in manufacturing in 1980 as an indicator of community industrial structure. Our key measures of local social structure come from the civic community framework (Tolbert, Lyson, and Irwin 1998; Tolbert, Irwin, Lyson, Nucci 2002).

Local Capitalism. Local capitalism refers to the degree to which businesses are embedded in the local community culture. We measure local capitalism as the percentage of all establishments that are small, old, and locally oriented. Small establishments are defined as establishments with fewer than five employees for retail and service establishments, and fewer than 20 for manufacturing and wholesale establishments. Old establishments are classified as establishments that have been in the same place for at least 15 years. Local orientation is defined as single or multi-unit establishments that operate within a single county. These local capitalism measures are derived from internal Census Bureau Economic Census establishment microdata.

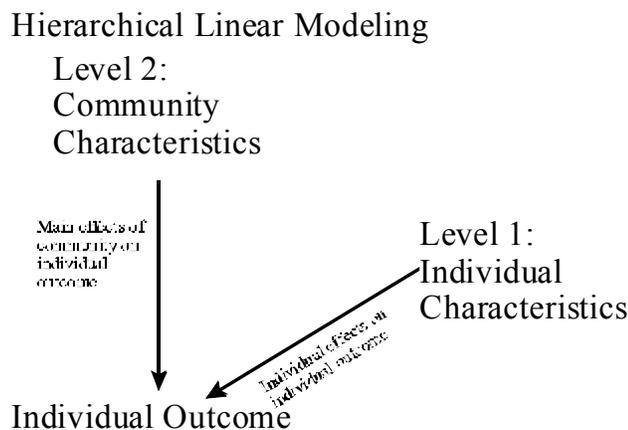
Civic Engagement. Civic engagement refers to the presence of local institutions that offer contexts for individuals to engage in daily public life. We include per person measures of local associations (voluntary associations, sports clubs, bowling leagues, etc.) and local third places (local hangouts such as bars, bowling alleys, restaurants, and beauty parlors) calculated from Economic Census establishment microdata. We define local as above. We also include a per capita measure of churches and a measure of the ratio of the county population to the number of adherents in civic denominations, from the Census of Churches produced by Glenmary Research (see Tolbert, Lyson, and Irwin 1998).

Control Items. Two measures of community type are also included, percent urban population in the county and metropolitan status of the county. Only one Census region, the North, exhibited a distinct nonmigration characteristic not explained by other variables. We have included this region as a dummy variable. Urban populations in both metropolitan and nonmetropolitan counties have been consistently shown to have tendencies towards greater mobility. Net of this, however, the remainder of metropolitan populations, often suburban and residential, have been shown to have lower migration rates than their nonmetropolitan counterparts. These measures are included as controls necessary to model the relationship between community context, individual characteristics and individual nonmigration.

period as having no child present.

To do this we use hierarchical linear modeling techniques in which we first model individual's propensity to stay in their communities based upon individual and household characteristics (level 1), then show how these individual factors vary across places and counties (level 2) according to local economic, social and cultural conditions.

Figure 1: Conceptual Model of HLM Approach



In our study, HLM estimation is preferable to traditional ordinary least squares contextual modeling approaches, because HLM accounts for the nonindependence of observations at the community level (Raudenbush, Bryk, and Congdon 1998). HLM corrects for nonindependence of community characteristics by simultaneously estimating both a within and between community model. In other words, HLM models simultaneously controls for individual characteristics and the community context in which the individual resides. Our baseline model for the analysis is the level 1 or individual characteristics model. We specify this model as:

$$\log\left(\frac{P_{ij}}{1 - P_{ij}}\right) = B_{0j} + B_1(\text{Individual})_{ij}$$

where the dependent outcome is a binary variable coded 1 if the respondent is a nonmigrant and 0 if the individual is a migrant. The independent measures in this model include individual characteristics only. Our second level model contains individual level coefficients along with level two community characteristics (such as region, metropolitan status, and civic engagement/local capitalism measures). We specify this model as:

$$B_{0j} = \gamma_{00} + \gamma_{01}(Community)_j + u_{0j}$$

$$B_{1j} = \gamma_{10}$$

In order to estimate these two level hierarchical effects, an individual model is run for each county. Without a sufficient number of individuals in each area these contextual effects can not be estimates reliably. To our knowledge these microdata are the only data set available that can produce these nonmigration/migration estimates of individual and contextual effects, using this approach.

Results:

Table 2 & 3 show the HLM results of the individual model and combined individual/contextual models respectively.

Table 2: Individual Model, HLM Results

<i>Individual-Level Model</i>		
<i>County Nonmigration =1</i>		
	Coefficient	T-Ratio
Intercept	1.08	160.12
Black	-0.15	-12.63
Hispanic	0.04	6.25
Live in state of birth	0.84	117.54
Female	0.06	51.71
Married, spouse present	0.34	103.62
Presence of children	-0.11	-40.20
College graduate	-0.49	-110.26
Hypermobile age	-0.79	-197.38

The log linear effects shown in Table 2 are largely consistent with other studies.² Blacks have a lower likelihood of staying in the county of origin than other races. Hispanics have a higher likelihood of staying. Living in one’s state of birth, reflecting a long term embeddedness in an area, increases the likelihood of staying over this five year period. Net of other factors, such as marital status and the presence of children, women are more likely to remain in place than men. Likewise, currently married (spouse present) individuals are more likely to remain in a county for this five year period than nonmarried (or those married whose spouses live elsewhere).

The presence of children in the family decreases the likelihood of remaining in a place over this time period. This is inconsistent with general findings in the literature. This may reflect the effects of children’s age composition. This variable mixes children of all ages and children born to previously childless couples during this time period. While overall probabilities of migration are decreased by the presence of children, mobility and migration probabilities tend to be higher

²Note that, with 20 million records, many variables that are not consistently significant across other studies, are significant here.

for families with young children and lowest for families with school aged children. We interpret our results as reflective of this compositional mix of children's ages in a single variable – a finding that implies better specification of the effects of children's ages upon adult predilection to stay in place.

Consistent with other findings are the clear effects of education and of adult age upon the probability of staying in the county of origin. College graduates are less likely to remain in a county as are adults who began this migration period in the hypermobile ages of 20 to 29.

Together this individual model provides a reliable beginning for our analysis. In the next step, we estimate these individual models for these 3000+ counties and evaluate the contextual effects of community structure on individual behaviors, net of these individual characteristics, as seen in Table 3.

Table 3: Individual and Contextual Model, HLM Results

Model for Individual and County Contextual Factors		
County Nonmigration =1		
<i>Population Ave. Model Effects</i>	Coefficient	T-Ratio
Intercept	1.04914	10.28
<i>Individual characteristics</i>		
Black	-0.18346	-15.40
Hispanic	0.02212	3.10
Live in state of birth	0.90654	121.02
Female	0.06110	49.12
Married, spouse present	0.37498	106.31
Presence of children	-0.11262	-38.49
College graduate	-0.53108	-111.68
Hypermobile age	-0.83365	-206.07
<i>County-level controls</i>		
Pct manufacturing 80	0.00930	20.78
Pct urban population	-0.00641	-25.68
Labor force growth, 80-89	-0.00027	-1.30
Ave Unemployment, 80-89	0.00433	2.76
North	0.16659	10.02
Metropolitan county	0.10297	8.08
<i>County-level civic indicators</i>		
Per capita churches	27.71546	4.84
Pct civic adherents	-0.00002	-0.03
Per person local associations	-40.14101	-1.76
Per person local third places	19.14103	2.77
Pct local establishments, 92	0.00119	1.14
Pct small establishments, 92	-0.00541	-5.34
Pct old establishments, 92	0.00864	9.01

The introduction of contextual effects adds additional explanatory power over and above those of

the individual effects. Note that the addition of these contextual effects into the individual model does not alter the individual model estimates significantly. Individual characteristics remain predictive in the same directions, largely at the same levels as in the individual model only, and all remain significant. Several contextual variables are not significant, including labor force growth, civic adherents, per person associations and percent local establishments.³ Although research has shown significant association between these characteristics and aggregate nonmigration rates, this relationship does not hold at the individual level.

Propensity to remain in one's community is enhanced in counties dominated by manufacturing, perhaps associated with a strong localist culture in these blue-collar communities. Consistent with many migration studies, urbanization decreases the likelihood of staying in place. Less consistent is the increased likelihood of staying in communities where unemployment is higher. However, as other migration studies have noted, unemployment only effects the unemployed, not others. Aggregate unemployment may well be associated with unspecified factors attaching people to communities.

Northern counties are more likely to retain individuals, as are metropolitan counties (a finding supported in aggregate analyses). The percent of the local economy dominated by small businesses operates in the opposite direction as we hypothesized. Small businesses are associated with decreased likelihood of staying in one's county of origin.

Net of individual effects and of contextual controls, three county characteristics of central theoretical to a civic community perspective are predictive of individual propensities to stay in their county of origin. These are per capita churches, per person third places, and the percentage of old establishments. This analysis shows that the presence of these civic community institutions is linked to individual migration behaviors. Where there are more churches, more gathering places, and more longstanding business establishments, we can expect that individuals will be less likely to move away. This finding holds over and above the usual individual level factors associated with migration behavior. This is strong evidence that these types of social institutions do influence the propensity to migrate.

These results provide support for the perspective that individual migration behavior is not solely explained by individual characteristics. Communities exert a clear and significant influence upon an individual's likelihood of migrating that is not exclusively determined by the nature of that individual. Further, this macro-level influence upon micro-level behavior is not purely economic, but rises from the social and cultural milieu of community.

Implications:

Our previous work demonstrated that local social structural factors are important determinants of aggregate nonmigration rates. Civic engagement and local capitalism are macro-social elements binding populations to places. However, this earlier work did not tie community context directly

³Note that the county characteristic standard errors (and t statistics) are based upon the county population (3000+) rather than upon the individual sample (20 million).

to individual behavior. The current analysis explicitly models this micro-macro link between individual behavior and community context.

The versatility of the internal Census version of the long-form 1990 data enables us to situate respondents in their 1985 counties of residence and to observe their residence in 1990. The rich information in the internal Economic Census microdata permits us to characterize the civic climates of counties. Joining the two internal data sources yields a large micro/macro metadata resource for analyzing the influence of community context on individual migration (or nonmigration) behavior.

We show that these contextual factors (the prevalence of churches, of older community embedded economic organizations, and local gathering places) constitute structural conditions associated with higher probabilities that individuals will remain in their communities. These macro-social civic variables act over and apart from basic well established economic and life course factors. Showing that this relationship exists is a significant contribution to migration theory in particular and community social theory generally. Our formulation stands in contrast to purely economic formulations used to explain individual choices about moving. We suggest that the institutional and organizational characteristics of places condition these rational economic migration choices. Thus individual migration decisions are themselves rooted in and derived from a social structural context.

The policy implications for community policy of civic institutional effects on nonmigration are clear. A community's long term prospects for social and economic development lie in the attachment and responsibility that citizens develop toward the future of their community. Such social obligation at minimum is predicated upon residential commitment to that community. While the prevalence of a residentially stable population does not guarantee such commitment, certainly it is a base from which to build healthy communities. Policies that build and enhance structural conditions for civic engagement can build interconnections among diverse groups and individuals. These bridging ties generally build public goods. But, they also specifically build a core of long term residents. Actively maintaining this core of committed citizenry could be the best way for communities to maintain long-term population stability, enhance local social conditions, and build sustainable economic health.

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